**IN THE CLAIMS:**

The following listing of claims will replace all prior versions and listings of claims in the application:

1. (Withdrawn) An integrated circuit that performs at least one search function, the integrated circuit comprising:

an interface circuit, the interface circuit being responsive to at least one device external to the integrated circuit;

a logic circuit, the logic circuit being responsive to the interface circuit, the logic circuit performing the at least one search function; and

a storage circuit, the storage circuit being responsive to the interface circuit, the interface circuit being adapted to provide an electrical interface between the logic circuit and the at least one device external to the integrated circuit, the interface circuit being adapted to provide an electrical interface between the storage circuit and the at least one device external to the integrated circuit, the storage circuit including table memory and operational plane memory, the operational plane memory being coupled to the table memory to enable each location in the operational plane memory to be simultaneously coupled in parallel to a unique location in the table memory, the storage circuit storing at least one table in the table memory, the storage circuit storing at least one table in the operational plane memory, the at least one search function being performed on the at least one table while the at least one table is stored in the operational plane memory.

2. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 1, wherein the integrated circuit is adapted for use as a peripheral device to at least one of a microprocessor, a microcontroller, and an application specific integrated circuit (ASIC).

3. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 1, wherein at least one of the table memory and the operational plane memory includes a multi-dimensional array of memory.

4. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 1, wherein at least one of the table memory and the operational plane memory includes at least one column, at least one row, and at least one table.

5. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 4, wherein the at least one column includes an array of bytes, the at least one row includes an array of columns, and the at least one table includes an array of rows.

6. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 1, wherein the interface circuit includes at least one register.

7. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 6, wherein the search function generates an output, the output being stored in the at least one register, the at least one device external to the integrated circuit reading the output of the search function from the at least one register.

8. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 6, wherein the at least one device external to the integrated circuit writes a command to the at least one register, the interface circuit interpreting the command and initiating an action in the integrated circuit in response to the command.

9. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 8, wherein the command is representative of at least one of specifying a portion of the storage circuit in which to store the at least one table, initiating storage of the at least one table in the storage circuit, specifying the at least one table stored in the storage circuit on which to perform the at least one search function, specifying at least one search key, specifying the at least one search function, and initiating the at least one search function.

10. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 1, wherein the at least one table includes a plurality of entries, the logic circuit including a plurality of processors, the plurality of processors performing the at least one search function in parallel on the plurality of entries.

11. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 1, wherein the at least one table includes a plurality of entries, the logic circuit outputting at least one of the plurality of entries that equals a search key.

12. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 1, wherein the at least one table includes a plurality of entries, the logic circuit outputting at least two of the plurality of entries between which a search key is located.

13. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 1, wherein the logic circuit performs at least one of a sequential and a parallel N-ary search.

14. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 1, wherein the table is modified while the table is in the operational plane memory.

15. (Currently Amended) A method of performing a search function in an integrated circuit, the method comprising the steps of:

storing a table [[into]] in a table memory in [[the]] an integrated circuit;

inputting a search key;

transferring [[substantially]] simultaneously [[the]] said table in parallel in one instruction cycle from [[the]] said table memory to an operational plane memory in [[the]] said integrated circuit, said table memory being distinct from said operational plane memory;

performing at least one search function on [[the]] said table in [[the]] said operational plane memory using [[the]] said search key; and

outputting a result of [[the]] said at least one search function from said integrated circuit.

16. (Currently Amended) A method of performing a search function in an integrated circuit, the method comprising the steps of:

storing a plurality of tables [[into]] in a table memory in [[the]] said integrated circuit;

inputting a table identifier, [[the]] said table identifier being representative of one of [[the]] said plurality of [[sorted]] tables;

inputting a search key;

transferring [[substantially]] simultaneously at least one of [[the]] said plurality of tables represented by [[the]] said table identifier in parallel in one instruction cycle from [[the]] said table memory to an operational plane memory in [[the]] said integrated circuit, said table memory being distinct from said operational plane memory;

performing at least one search function on [[the]] said at least one table in [[the]] said operational plane memory using [[the]] said search key; and

outputting a result of [[the]] said at least one search function from said integrated circuit.

17. (Original) A method of performing a search function in an integrated circuit as defined by Claim 16, the method further comprising the step of coupling the integrated circuit to at least one of a microprocessor, a microcontroller, and an application specific integrated circuit (ASIC).

18. (Original) A method of performing a search function in an integrated circuit as defined by Claim 16, the method further comprising the step of arranging at least one of the table memory and the operational plane memory as a multi-dimensional array of memory.

19. (Original) A method of performing a search function in an integrated circuit as defined by Claim 16, the method further comprising the step of arranging at least one of the table memory and the operational plane memory in at least one column, at least one row, and at least one table.

20. (Original) A method of performing a search function in an integrated circuit as defined by Claim 16, the method further comprising the steps of:

arranging the at least one column as an array of bytes;

arranging the at least one row as an array of columns; and

arranging the at least one table as an array of rows.

21. (Original) A method of performing a search function in an integrated circuit as defined by Claim 16, the method further comprising the step of storing the result in at least one register in the integrated circuit, the at least one register being accessible to at least one device external to the integrated circuit.

22. (Original) A method of performing a search function in an integrated circuit as defined by Claim 16, the method further comprising the steps of:

inputting a command to at least one register in the integrated circuit;

interpreting the command by the integrated circuit; and

initiating an action in the integrated circuit in response to the command.

23. (Original) A method of performing a search function in an integrated circuit as defined by Claim 22, wherein the command is representative of one of specifying a portion of the storage circuit in which to store at least one of the plurality of tables, initiating storage of the plurality of tables in the storage circuit, specifying the at least one table stored in the storage circuit on which to perform the at least one search function, specifying at least one search key, specifying the at least one search function, and initiating the at least one search function.

24. (Original) A method of performing a search function in an integrated circuit as defined in Claim 16, the method further comprising the step of inputting a search function identifier, the search function identifier being representative of one of the plurality of search functions, the integrated circuit, performing the at least one search function represented by the search function identifier.

25. (Original) A method of performing a search function in an integrated circuit as defined in Claim 16, wherein the at least one table includes a plurality of entries, the step of performing the at least one search function being performed in parallel on the plurality of entries of the at least one table.

26. (Original) A method of performing a search function in an integrated circuit as defined in Claim 16, wherein the at least one table includes a plurality of entries, the result including at least one of the plurality of entries that equals a search key.

27. (Original) A method of performing a search function in an integrated circuit as defined in Claim 16, wherein the at least one table includes a plurality of entries, the result including at least two of the plurality of entries between which a search key is located.

28. (Original) A method of performing a search function in an integrated circuit as defined in Claim 16, wherein the at least one search function performed includes at least one of a sequential and a parallel N-ary search.

29. (Original) A method of performing a search function in an integrated circuit as defined in Claim 16, wherein the step of transferring one of the plurality of tables substantially simultaneously in parallel from the table memory to the operational plane memory in the integrated circuit is performed in response to the integrated circuit receiving an initiate search command.

30. (Original) A method of performing a search function in an integrated circuit as defined in Claim 16, the method further comprising the step of modifying the at least one table while the at least one table is in the operational plane memory.

31. (Withdrawn) A system that performs at least one search function, the system comprising:

at least one external device, the at least one external device being external to the integrated circuit; and

an integrated circuit, the integrated circuit including:

an interface circuit, the interface circuit being responsive to the at least one external device;

a logic circuit, the logic circuit being responsive to the interface circuit, the logic circuit performing the at least one search function; and

a storage circuit, the storage circuit being responsive to the interface circuit, the interface circuit being providing an electrical interface between the logic circuit and the at least one external device, the interface circuit providing an electrical interface between the storage circuit and the at least one external device, the storage circuit including table memory and operational plane memory, the operational plane memory being coupled to the table memory to enable each location in the operational plane memory to be simultaneously coupled in parallel to a unique location in the table memory, the storage circuit storing at least one table in the table memory, the storage circuit storing at least one table in the operational plane memory, the at least one search function being performed on the at least one table while the at least one table is stored in the operational plane memory.

32. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 31, wherein the integrated circuit is adapted for use as a peripheral device to the at least one external device, the at least one external device including at least one of a microprocessor, a microcontroller, and an application specific integrated circuit (ASIC).

33. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 31, wherein at least one of the table memory and the operational plane memory includes a multi-dimensional array of memory.

34. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 31, wherein at least one of the table memory and the operational plane memory includes at least one column, at least one row, and at least one table.

35. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 34, wherein the at least one column includes an array of bytes, the at least one row includes an array of columns, and the at least one table includes an array of rows.

36. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 31, wherein the interface circuit includes at least one register.

37. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 36, wherein the search function generates an output, the output being stored in the at least one register, the at least one device external to the integrated circuit reading the output of the search function from the at least one register.

38. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 36, wherein the at least one device external to the integrated circuit writes a command to the at least one register, the interface circuit interpreting the command and initiating an action in the integrated circuit in response to the command.

39. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 38, wherein the command is representative of at least one of specifying a portion of the storage circuit in which to store the at least one table, initiating storage of the at

least one table in the storage circuit, specifying the at least one table stored in the storage circuit on which to perform the at least one search function, specifying at least one search key, specifying the at least one search function, and initiating the at least one search function.

40. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 31, wherein the at least one table includes a plurality of entries, the logic circuit including a plurality of processors, the plurality of processors performing the at least one search function in parallel on the plurality of entries.

41. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 31, wherein the at least one table includes a plurality of entries, the logic circuit outputting at least one of the plurality of entries that equals a search key.

42. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 31, wherein the at least one table includes a plurality of entries, the logic circuit outputting at least two of the plurality of entries between which a search key is located.

43. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 31, wherein the logic circuit performs at least one of a sequential and a parallel N-ary search.

44. (Withdrawn) An integrated circuit that performs at least one search function as defined by Claim 31, wherein the table is modified while the table is in the operational plane memory.

45. (Currently Amended) A method of performing a search function, the method comprising the steps of:

inputting unsorted entries;

performing a hash function on [[the]] said unsorted entries, [[the]] said hash function arranging [[the]] said unsorted entries into a sorted table;

storing [[the]] said sorted table [into]] in a table memory in an integrated circuit;

inputting a search key;

transferring [[substantially]] simultaneously the sorted table in parallel in one instruction cycle from the table memory to an operational plane memory in [[the]] said integrated circuit, said table memory being distinct from said operational plane memory;

performing at least one search function on [[the]] said sorted table in [[the]] said operational plane memory using [[the]] said search key; and

outputting a result of [[the]] said at least one search function from said integrated circuit.

46. (Currently Amended) A method of performing a search function, the method comprising the steps of:

inputting unsorted entries;

performing a first hash function on [[the]] said unsorted entries, [[the]] said first hash function arranging [[the]] said unsorted entries into a plurality of sorted tables;

storing [[the]] said plurality of sorted tables [[into]] in a table memory in an integrated circuit;

inputting a search key;

performing a second hash function on [[the]] said search key, the second hash function outputting a table identifier, the table identifier being representative of one of [[the]] said plurality of sorted tables in which [[the]] said search key is likely to be found;

transferring substantially simultaneously at least one of [[the]] said plurality of tables represented by [[the]] said table identifier in parallel in one instruction cycle from [[the]] said table memory to an operational plane memory in [[the]] said integrated circuit, said table memory being distinct from said operational plane memory;

performing at least one search function on [[the]] said at least one table in [[the]] said operational plane memory using [[the]] said search key; and

outputting a result of [[the]] said at least one search function from said integrated circuit.

47. (Original) A method of performing a search function as defined by Claim 46, wherein the steps of performing a first hash function and performing a second hash function are performed by at least one of a microprocessor, a microcontroller, and an application specific integrated circuit (ASIC).

48. (Original) A method of performing a search function as defined by Claim 46, the method further comprising the step of arranging at least one of the table memory and the operational plane memory as a multi-dimensional array of memory.

49. (Original) A method of performing a search function as defined by Claim 46, the method further comprising the step of arranging at least one of the table memory and the operational plane memory in at least one column, at least one row, and at least one table.

50. (Original) A method of performing a search function as defined by Claim 46, the method further comprising the steps of:

arranging the at least one column as an array of bytes;

arranging the at least one row as an array of columns; and

arranging the at least one table as an array of rows.

51. (Original) A method of performing a search function as defined by Claim 46, the method further comprising the step of storing the result in at least one register in the integrated circuit, the at least one register being accessible to at least one device external to the integrated circuit.

52. (Original) A method of performing a search function as defined by Claim 46, the method further comprising the steps of:

inputting a command to at least one register in the integrated circuit;

interpreting the command by the integrated circuit; and

initiating an action in the integrated circuit in response to the command.

53. (Original) A method of performing a search function as defined by Claim 52, wherein the command is representative of one of specifying a portion of the storage circuit in which to store at least one of the plurality of tables, initiating storage of the plurality of tables in the storage circuit, specifying the at least one table stored in the storage circuit on which to perform the at least one search function, specifying at least one search key, specifying the at least one search function, and initiating the at least one search function.

54. (Original) A method of performing a search function as defined in Claim 46, the method further comprising the step of inputting a search function identifier, the search function identifier being representative of one of the plurality of search functions, the integrated circuit performing the at least one search function represented by the search function identifier.

55. (Original) A method of performing a search function as defined in Claim 46, wherein the at least one table includes a plurality of entries, the step of performing the at least one search function being performed in parallel on the plurality of entries of the at least one table.

56. (Original) A method of performing a search function as defined in Claim 46, wherein the at least one table includes a plurality of entries, the result including at least one of the plurality of entries that equals a search key.

57. (Original) A method of performing a search function as defined in Claim 46, wherein the at least one table includes a plurality of entries, the result including at least two of the plurality of entries between which a search key is located.

58. (Original) A method of performing a search function as defined in Claim 46, wherein the at least one search function performed includes at least one of a sequential and a parallel N-ary search.

59. (Original) A method of performing a search function as defined in Claim 46, wherein the step of transferring one of the plurality of tables substantially simultaneously in parallel from the table memory to the operational plane memory in the integrated circuit is performed in response to the integrated circuit receiving an initiate search command.

60. (Original) A method of performing a search function as defined in Claim 46, the method further comprising the step of modifying the at least one table while the at least one table is in the operational plane memory.